
Weekly Report / MEI Honghui

6.26-7.2

VisComposer Paper

See PPT.

ChinaVis Revision

MAJOR CHANGES

Deleted some relatively unimportant figures to control the paper length. (original Figure 1, 3, 5, 6, 8).

REVIEW 1

1. The tools for hierarchical data in Sec. 3.5 are not clearly described, particularly the part of the “specified levels”. And, the fixed schema means the given template?

specified levels → a certain number of levels; fixed schema → given structure

2. The paper has discussed tabular data and hierarchical data in Sec. 3.5, why not discuss the data regarding network graph?

Data representing a graph can be an adjacent matrix, which is tabular, or a node-link representation. As the result, we add sentences describing such situations.

3. The paper mentions the open questions of expressiveness, accessibility, efficiency in Sec. 2. However, there are only limited texts to describe the relationship between dimensions of design space and the questions. It would be fine if there are detailed discussions for the questions regarding the dimensions.

It's true that the three criteria should be taken into consideration from several different aspects(dimensions). However, we haven't emphasized such considerations. In this revision, we add discussion of the three criteria in some dimensions, including Section 3.2, 3.4, and 3.9.

4. Text repetition in Sec. 2: the sentence “On the other hand...” and the sentence “On the other hand...” in the following paragraph describe the same content.

Deleted the repeated sentence.

5. There are incomplete texts. E.g., In Sec. 3.3: “In some researches (cite)”, In Sec. 3.8: “However, such tools”.

The misplaced texts are all deleted or modified.

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6. English writing needs to be refined. There are a lot of writing errors in the paper. E.g., "state-of-art", "steaming data", "automatic-able", "this tools", "can only draws", "are also build", etc.

Many refinements on grammar and vocabulary have been applied.

REVIEW 2

1. Choice of terminology. I find dimensions such as 'usability', 'portions of customization' and "operation method" vague and potentially confusing. I understand what these dimensions are about after reading the discussions, but these dimensions could be better named.

"usability" → "how to use"; "portions of customization" → "customization allowed";
"operation method" → "action type"

2. I wish there is a deeper discussion on "degree of abstraction". Compared to dimensions such as "presentation medium" and "supported data source", "degree of abstraction" is more interesting, and is probably one of the most important dimensions in the design space. I feel section 3.2 only provides a high level overview, and is inadequate for readers to understand the important issues at hand.

Several paragraphs have been added to discuss and demonstrate the differences among these degrees of abstractions.

3. The writing needs polishing. In section 2, "make a balance among expressiveness, accessibility, efficiency" is repeated twice. Section 2.2 starts with an incomplete sentence "Chart topology [17]". In section 3.8, "However, such tools" is not a complete sentence. There are also numerous typos and grammatical mistakes to be corrected.

The misplaced texts are all deleted or modified. Many refinements on grammar and vocabulary have been applied.

OTHERS / MINOR CHANGES

- ♦ delete the misplaced texts
- ♦ added missed cites
- ♦ correct typos
- ♦ correct grammar mistakes

modified figures' positions and sizes for a better layout

Paper Read

Programming by Demonstration

[1] F. Grabler, M. Agrawala, W. Li, M. Dontcheva, and T. Igarashi, "Generating photo manipulation tutorials by demonstration," ACM Trans. Graph., vol. 28, no. 3, p. 1, 2009.

Generates tutorials which are text descriptions.

[2] B. A. Myers, “Visual programming, programming by example, and program visualization: a taxonomy,” in Proceedings of the SIGCHI conference on Human factors in computing systems - CHI '86, 1986, no. April, pp. 59–66.

[3] H. Lü and Y. Li, “Gesture Coder: A tool for programming multi-touch gestures by demonstration,” SIGCHI Conf. Hum. Factors Comput. Syst., pp. 2875–2884, 2012.

Construct a state machine during user interaction. Machine learning techniques are used to distinguish different transitions and states. The state machine can be used to distinguish different type of gestures.

[4] G. Leshed, E. M. Haber, T. Matthews, and T. Lau, “CoScripter : Automating & Sharing How-To Knowledge in the Enterprise,” Proc. SIGCHI Conf. Hum. Factors Comput. Syst., pp. 1719–1728, 2008.

Generate text descriptions.

Others

[5] J. Harper and M. Agrawala, “Deconstructing and Restyling D3 Visualizations,” pp. 253–262, 2014.

Reverse-engineering. Directly read meta data stored in DOM element by D3 (`.__data__`). Not very useful. (The later paper by same author in 2017 uses text identification)

[6] K. Wang and R. Zemel, “Classifying NBA Offensive Plays Using Neural Networks,” MIT Sloan Sport. Anal. Conf., pp. 1–9, 2016.

[7] J. Sarracino et al., “User-Guided Synthesis of Interactive Diagrams,” Proc. 35th Annu. ACM Conf. Hum. Factors Comput. Syst. - CHI '17, pp. 195–207, 2017.

[8] C. Gutwin, A. Cockburn, and A. Coveney, “Peripheral Popout: The Influence of Visual Angle and Stimulus Intensity on Popout Effects,” Proc. 2017 CHI Conf. Hum. Factors Comput. Syst. - CHI '17, pp. 208–219, 2017.

[9] F. Mwalongo, M. Krone, G. Reina, and T. Ertl, “State-of-the-Art Report in Web-based Visualization,” Comput. Graph. Forum, vol. 35, no. 3, pp. 553–575, 2016.

Useful survey when determining the technique stack of a web-based VA system.

TODO Next Week

- VisComposer
 - Implement new features
 - Write paper